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ABSTRACT

The present invention provides compensation for distortions in a multi-stage amplifier having a gain expansion characteristic. The present invention also provides an approach for using an amplification stage biased in a state close to B-class, which exhibits high power with added efficiency at low output, in order to have a gain expansion characteristic in all stages of a multi-stage amplifier. The amplifier of the present invention has a gain expansion characteristic which presents an increase in gain in response to an increase in input power or output power in a certain range of the input power or the output power. The amplifier is characterized in that an emitter grounded amplifier circuit comprising a first bipolar transistor has a base terminal to which an input matching circuit and a cathode of a first diode for supplying a bias voltage are connected through a first impedance element which does not block a direct current, and the first diode has an anode which is connected to a reference power supply which presents a sufficiently low impedance at high frequencies.